

Notice of Allowability

Application No.

10/786,307

Examiner

Anatoly Vortman

Applicant(s)

KIM ET AL.

Art Unit

2835

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to RCE and Amendment filed on 08/11/06.
2. ☒ The allowed claim(s) is/are 1,5-12 and 14-31 (renumbered 1-27, respectively).
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some* c) ☐ None of the:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|---|---|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. <input checked="" type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date <u>09/06</u> . |
| 3. <input checked="" type="checkbox"/> Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date <u>8/28/06</u> | 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input type="checkbox"/> Other _____ |

Anatoly Vortman
Primary Examiner
Art Unit 2835

EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

The application has been amended as follows:

The following amendments to the claims have been made to correct minor antecedent problems and do not affect the scope of the claims:

Claim 3 has been cancelled;

Claim 5, line 2 of the claim, [cooling unit is plate shape and] has been replaced with --plate-heat pipe is--;

Claim 22, line 2 of the claim, [unit] has been replaced with --system--; and,

Claims 28 and 29, line 1 of the claims, [part] has been replaced with --block--.

2. The following is an examiner's statement of reasons for allowance:

The Applicant's arguments regarding the rejections of independent claims 1 and 21 have been found persuasive (see Reply of 08/11/06, p. 13, lines 5-13, p. 14, lines 7-11). Therefore, the rejections of claims 1 and 21 are hereby withdrawn and claims are allowed. The remaining independent claims have been amended and are allowed as well.

The allowability resides in the overall structure of the device as recited in independent claims 1, 8, 16, and 21, and at least in part, because claim 1 recites: "a liquid coolant moving

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block configured to return coolant to a beginning of a liquid phase transition block from an end of the liquid phase transition block, and an insulation block between the liquid phase transition block and liquid coolant moving block”, claim 8 recites: “a liquid coolant storage block at one end, a evaporation block having first size channels coupled to the liquid coolant storage block, a gaseous coolant moving block coupled to the evaporation block, and a condensation block having second channels larger than the first channels coupled to the gaseous coolant moving block”, claim 16 recites: “a plate-heat pipe covering one side of the frame to form a top surface of the fan housing [...] wherein the plate-heat pipe overlaps a portion of the dissipating unit, and wherein the plate-heat pipe is configured to contact a heat source to deliver heat to the dissipating unit by circulating a fluid through its inside”, and claim 21 recites: “a micro cooling system having a first side configured with a heat releasing part contained within the frame by the recess and a second opposite side configured to include a heat absorption part [...] a plate-heat pipe on one side of the frame and configured to deliver heat from the frame to the dissipating unit by circulating a fluid through its inside”.

The aforementioned limitations in combination with all remaining limitations of the respective claims, are believed to render the aforementioned independent claims and all claims dependent therefrom patentable over the art of record.

None of the references of record either taken alone or in combination is believed to render the present invention unpatentable as claimed.

3. Any comments considered necessary by Applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue

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fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anatoly Vortman whose telephone number is 571-272-2047. The examiner can normally be reached on Monday-Friday, between 10:00 am and 6:30 pm..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ms. Lynn Feild can be reached on 571-272-2092. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

AV



Anatoly Vortman
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